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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,972	03/27/2001	Katsuhisa Yuda	GOM-02001	9306

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9
EXAMINER

CROWELL, ANNA M

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/818,972

Applicant(s)

YUDA ET AL.

Examiner

Michelle Crowell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-6, 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application):
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II, claims 7-12 in Paper No. 7 is acknowledged.

Claim Objections

2. Claim 8 is objected to because of the following informalities: "a optical" should be changed to "an optical". Appropriate correction is required.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatanaka et al. (U.S. 5,962,083).

Referring to Figure 1 and column 3, line 15 – column 5, line 13, Hatanaka et al. discloses

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a plasma CVD apparatus for forming a silicon oxide film on a substrate comprising: a plasma generating region 1 which forms plasma of a first gas containing oxygen atoms (col. 3, lines 18-29, line 55); a deposition region 4 which is placed on the substrate 7 so as to be separated from the plasma generating region (Fig. 1, col. 3, line 26); a substrate holding mechanism 7a which is provided with the substrate in the deposition region (Fig. 1); a supply unit 6 which supplies second gas containing silicon atoms into the deposition region (col. 3, lines 30-45); and a control unit 24, 25 (Fig. 1, col. 5, line 12-13).

With respect to claim 8, the control unit 24, 25 comprises an optical emission spectrometer 22 which spectrally detects luminescence of the deposition region 4 (col. 5, lines 7-13).

With respect to claim 9, an optical transmitting window is arranged at the chamber wall, which is preferably placed in the deposition region, and the optical emission spectrometer 22 measures a light beam passing through the light transmitting window (Fig. 1, col. 5, lines 7-13).

Hatanaka et al. recites the claimed gases; however, the type of gases, *a first gas containing oxygen atoms, a deposition region including excitation oxygen molecules and excitation oxygen atoms, and a second gas containing silicon atoms in the deposition region*, used in apparatus claims are considered intended use and therefore are of no significance in determining patentability. Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

The limitations of claims 10-12 are directed to method limitations instead of apparatus limitations and since an apparatus is being claimed as the instant invention, the method teachings

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are not considered to be the matter at hand, since a variety of methods can be done with the apparatus. The method limitations are viewed as intended uses which do not further limit, and therefore do not patentably distinguish the claimed invention. Furthermore, the apparatus of Hatanaka et al. is capable of measuring the deposition region and controlling the deposition condition.

With regard to limitation reciting the excitation oxygen molecule having a peak near 761 nm and the excitation oxygen atom having a peak near 777 nm, this limitation is considered simply a characteristic. Therefore, since no structure has been claimed, patentable weight has not been given to this limitation.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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8. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Felts et al. (U.S. 5,364,665) in view of Ogawa et al. (U.S. 6,044,792).

Referring to Figures 1 and 2, and column 5, line 43 – column 6, line 48, Felts et al. discloses a plasma CVD apparatus for forming a silicon oxide film on a substrate comprising: a plasma generating region 11 which forms plasma of a first gas containing oxygen atoms (col. 5, lines 55-60); a deposition region 11 which is placed on the substrate 13; a substrate holding mechanism 32 which is provided with the substrate in the deposition region (Fig. 2); a supply unit 15 which supplies second gas containing silicon atoms into the deposition region (col. 5, lines 55-60); and a control unit 27 (Fig. 1, col. 6, lines 13-20).

With respect to claim 8, the control unit 27 comprises an optical emission spectrometer 21 which spectrally detects luminescence of the deposition region 11 (col. 6, lines 6-11).

With respect to claim 9, an optical transmitting window 25 is arranged at the chamber wall, which is preferably placed in the deposition region, and the optical emission spectrometer 21 measures a light beam passing through the light transmitting window (Fig.1, col. 6, lines 6-17).

Felts et al. recites the claimed gases; however, the type of gases, *a first gas containing oxygen atoms, a deposition region including excitation oxygen molecules and excitation oxygen atoms, and a second gas containing silicon atoms in the deposition region*, used in apparatus claims are considered intended use and therefore are of no significance in determining patentability. Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

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The limitations of claims 10-12 are directed to method limitations instead of apparatus limitations and since an apparatus is being claimed as the instant invention, the method teachings are not considered to be the matter at hand, since a variety of methods can be done with the apparatus. The method limitations are viewed as intended uses which do not further limit, and therefore do not patentably distinguish the claimed invention. Furthermore, the apparatus of Felts et al. is capable of measuring the deposition region and controlling the deposition condition.

With regard to limitation reciting the excitation oxygen molecule having a peak near 761 nm and the excitation oxygen atom having a peak near 777 nm, this limitation is considered simply a characteristic. Therefore, since no structure has been claimed, patentable weight has not been given to this limitation.

Felts et al. fails to teach the plasma generating region separated from the deposition region.

Referring to Figures 4, 8, 9, column 14, line 61 – column 15, line 52, and column 17, line 36-column 18, line 9, Ogawa et al teaches a plasma CVD apparatus in which the plasma generating region 27, 33 is separate from the deposition region 21. It is conventionally known in the art to separate a plasma generating region from a deposition region in order to prevent substrate damage. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to separate the plasma generating region from the deposition region of Felts et al. as taught by Ogawa et al. in order to prevent substrate damage.

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Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mikoshiba et al. '320, Sevillano et al. '759, Valerie '502, and Nakayama et al. '119 show a processing apparatus having an optical emission spectrometer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (703) 305-1956. The examiner can normally be reached on M-F (8:00 - 4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

AMC *AMC*
August 11, 2003

Luz Alejandro Mulero
LUZ ALEJANDRO-MULERO
PRIMARY EXAMINER